

CECAP Transportation, Waste and Land Framework

NOTE: The content in the “actions” sections beginning on page 5 is the product of the Working Group Energy subgroup, and has not yet been revised to reflect whether an action already has programs or policies to address it underway (e.g. Fairfax County Government operations).

Background

ICF and MWCOG are supporting Fairfax County as they work towards the creation of the County’s Community Energy and Climate Action Plan (CECAP). CECAP will focus on actions that community members can take to address climate. Working Group members have already made progress toward the plan by establishing greenhouse gas (GHG) reduction goals including a long-term goal and a pending interim year goal. The goals established and pending from the previous meetings are:

Long-term goal: Carbon neutrality by 2050, with at least 87% coming from emissions reductions from a 2005 base year.

Interim goal: 50% reduction by 2030 from a 2005 base year, 2040 interim goal pending.

As Working Group and community meetings progress, we will continue to develop the plan and finalize all goals for CECAP.

Purpose of this Document

The purpose of this document is to provide a framework for the Transportation, Waste and Land strategies that contribute to the CECAP. Strategies were discussed in the December and January working group meetings. This framework builds on the “Discussion Starters” document and has been updated based on ideas and discussions provided by the working group. Below, ICF has outlined sector specific ideas based on ICF’s prior plans and feedback received through CECAP stakeholder engagement and public outreach. CECAP stakeholders have been split into two groups with the goal of facilitating discussions. The two groups are:

- An energy group focusing on efficiency, renewables, generation, and supply. This group is tightly focused on energy issues with minor consideration of external variables.
- A transportation, land use policy, and waste and solid water group. This group has a more diverse focus.

Setting the Stage

As a next step, sector-specific subgroups of the CECAP Working Group will meet determine and prioritize the strategies that Fairfax County will use to reach its goals. ICF will be providing an initial set of *Impact Discussion Starters* and a *Prioritization Matrix* to frame impacts. These documents are intended to support discussion and help guide and inform stakeholder priorities. In the upcoming meetings, members will use this document, along with the *Impact Discussion Starters*, and *Prioritization Matrix* to guide priorities and refine specific strategies, actions, and implementation for inclusion in the plan.

Language used throughout the framework documents

As the framework for CECAP has evolved, certain terms have taken on specific meaning. A list of defined terms is outlined below:

Sector: An area of emissions focus or an economic sector which generates carbon emissions from its energy use or economic activity.

Strategy: A broader set of actions or set of sub-sector work that can be modeled to understand emissions reductions.

Action: A project or specific technology that impacts greenhouse gas emissions within a strategy or sector.

Implementation: Programs or policies that support realization of actions.

Within the Implementation section of each strategy, we have categorized each specific implementation methods to indicate where the ability to impact change might exist. Within each strategy, implementation items are divided based on the following categories.

Category 1: Implementation programs and policies currently available to County: County measures and voluntary programs that the county can do right now.

Category 2: Implementation programs and policies that might become available to the County in the future: County programs and policies that the County might someday be able to do with state enabling legislation. Items in this section is work that the County and its stakeholders can advocate for at the state level.

Category 3: Implementation programs and policies that need Regional, State or Federal

Action: State and Federal measures and programs that the County will likely have the authority to do on its own. Items in this section is work that the County and its stakeholders can advocate for the state, regional or federal to do to support County goals.

Connecting to Fairfax Values

ICF has been working to connect strategies and actions to Fairfax County values. [One Fairfax](#) is a framework—or “lens”—that will be used to consider equity in decision-making and in the development and delivery of future policies, programs, and services. In this planning process, it will help county to look intentionally, comprehensively, and systematically at barriers that may be creating gaps in opportunity. Through the CECAP process, opportunities exist to ensure that ICF will work to create a plan that incorporates social and racial equity, economic opportunities, and health and environmental justice impacts. In our upcoming meetings we will continue this discussion with the support of the initial framework provided in the *Impacts Discussion Starter* and *Prioritization Matrix*.

Social and Racial Equity: Strategies shall have connections to social and racial equity in alignment with the One Fairfax policy.

Economic Opportunity: Strategies shall contain an economic screen to understand the affordability of the measures and how they might create economic opportunities for the County. Costs and/or savings will be provided for each strategy later in the CECAP process.

Health and Environmental Justice: Strategies will also reflect health and environmental justice issues relevant to County residents and businesses. Pollutant reductions will be provided for each strategy later in the CECAP process.

CECEP Framework for Sectors and Strategies

Buildings and Energy Efficiency

Strategy #1: Increase energy efficiency and conservation in existing buildings

Strategy #2: Pursue beneficial electrification in existing buildings

Strategy #3: Implement green building standards for new buildings

Energy Supply

Strategy #4: Increase renewable energy in grid mix

Strategy #5: Increase production of onsite renewable energy

Strategy #6: Increase energy supply from renewable natural gas (RNG), hydrogen, and power-to-gas

Transportation

Strategy #7: Increase electric vehicle (EV) adoption

Strategy #8: Support efficient land use, active transportation, public transportation, and transportation demand management (TDM) to reduce vehicle miles traveled

Strategy #9: Increase fuel economy and use of low carbon fuels for transportation

Waste

Strategy #10: Reduce the amount of waste generated and divert waste from landfills and waste-to-energy facilities.

Strategy #11: Responsibly manage all waste generated including collected residential and commercial waste, wastewater and other items.

Forestry and Land Use

Strategy #12: Support preservation, restoration, and expansion of Fairfax County's natural systems and public spaces

Transportation Strategy #7: Increase electric vehicle (EV) adoption

Actions:

- **Action 7a:** Leverage County assets to expand EV use across on-road vehicles and off-road equipment
 - 1) Incorporate EVs in the existing county on-road fleet including medium and heavy-duty vehicles such as trash haulers, shuttles, buses/school buses.
 - 2) Incorporate electric off-road vehicles in the county fleet (mowers, forklifts, leaf blowers)
 - 3) Install EV charging at county facilities to encourage EV adoption among employees
 - 4) Build solar canopies at county owned parking lots and depots
- **Action 7b:** Encourage EV adoption by consumers and private fleets
 - 1) Increase equitable access to EV charging at multifamily housing and rental properties
 - 2) Allow EV charging infrastructure to be installed in the right-of-way (on-street parking)
 - 3) Promote EV charging infrastructure public and private high frequentation areas (parks, public spaces, shopping areas).
- **Emerging Technologies**
 - 1) Track the development and integration of autonomous vehicles
 - 2) Promote EV carsharing and ridesharing programs
 - 3) Explore vehicle grid integration (VGI) programs
- **Action 7c:** Encourage new buildings to install EV chargers or be “EV charger ready”

Implementation:

- **Category 1:**
 - Electrify the County fleet; review and update the [County Operational Energy Strategy](#).
 - Pursue light-duty EVs in the near term and medium- and heavy-duty EVs in later years. Potential funding source is the [CMAQ Vehicle Fuel Conversion Incentive Program](#) through Virginia Clean Cities and the [Volkswagen Mitigation Trust Fund](#) through the Dept. of Environmental Protection
 - Rebates and Incentives
 - Local rebates and incentives for EVs, E-bikes and EV Charging infrastructure
 - Education
 - Implement EV charging policies to ensure ADA compatibility and improve wayfinding
 - Develop an educational campaign for consumers to communicate the benefits of EVs, including passenger vehicles but also lawn mowers and leaf blowers
 - Develop toolkits with information about EV charging and best practices both at home, at the workplace and when traveling within and outside the county
 - Implement basic notions of sustainable mobility and EVs in school curricula, beginning in elementary school
 - Financing
 - Pursue grants and utility funding when available to invest in EV charging infrastructure at County facilities including schools, recreational and sport facilities to encourage EV adoption among both county employees and regular visitors

- Work with community based organizations and local financial institutions to create equitable opportunities for EV adoption through innovative mechanisms such as [low interest EV loans](#)
 - Development and Partnerships
 - Work with consumer-based organizations and autodealers to increase availability of EV models
 - Implement policies to streamline and clarify EV charging permitting and inspection processes at private and public locations, including curbside charging, streetlight poles, and right of way
 - Support the ability to leverage the zoning and land use codes to mandate the installation of EV-ready charging infrastructure in new residential buildings (single and multi-family housing) and commercial buildings, including large retrofits
- **Category 2**
 - Support policies that engage workplaces and private commercial businesses (including car share locations) to incentivize EV charging infrastructure
 - Support policies that engage with transportation network companies (TNCs) and delivery services (both large companies such as UPS, Fedex, and small businesses) to explore funding mechanisms to increase EV use across platforms e.g., using electric vans and e-cargo bikes
 - Develop Fairfax-specific plan for integrating the use autonomous vehicles (AVs) in sustainable and equitable ways, to reduce emissions and congestion, and increase access to EVs (e.g., only allow electric AVs, deploy AVs in areas underserved by public transit)
 - Implement basic notions of sustainable mobility and EVs in school curricula, beginning in elementary school
 - Explore novel business and financing models as well as strategic partnerships with private companies to incorporate electric vehicles in the county fleet through leasing.
- **Category 3**
 - State/Federal Programs
 - Encourage state participation in the Multi-State Zero Emission Vehicles ([ZEV](#)) [Taskforce](#) to implement ZEV sale mandates and targets
 - Support the continued active participation of the state in TCI
 - Leverage existing and future funding sources (Volkswagen Mitigation Trust Fund and the multi-state Transportation & Climate Initiative, [TCI](#)) to explore the creation of local incentive programs similar to [DriveCleanChicago](#) to fund electric taxis, electric carsharing or e-bikes especially in areas underserved by public transit
 - Support the creation of point-of sale vouchers and other equitable incentives for all EVs
 - Work with the state to support the creation of a Virginia Green Bank to lower the implementation cost of EVs
 - Support and expand High Occupancy Vehicle (HOV) lane exemptions for EVs to major travel corridors in Fairfax County (e.g., the [I-395 express lane](#) and the [I-66](#) outside the beltway), and other non-monetary incentives

- Utility Programs
 - Work with utilities and the Public Utility Commission to support new and existing utility initiatives (e.g., Dominion Energy [EVSE rebate](#)) to implement demand-response programs (time-of-use charging rate plans; off-peak charging; vehicle-to-grid integration)

Transportation Strategy #8: Support efficient land use, active transportation, public transportation and transportation demand management (TDM) to reduce vehicle miles traveled

Actions:

- **Action 8a:** Improve bicycle and pedestrian infrastructure
 - 1) Expand and improve the quality of walkable paths to shopping areas (e.g., by preserving and improving the tree canopy)
 - 2) Improve maintenance and safety of walking paths by keeping them clear from ice and snow
 - 3) Create protected bike trails/lanes separated from car traffic
 - 4) Expand the biking lane network
 - 5) Install more bike racks in shopping centers, private businesses and public transit stations (metro and new BRT stations, to close the last mile gap)
 - 6) Connect biking and walking trails to eliminate to improve safety and usability, including walking bridges
 - 7) Ensure adequate lighting and signaling on walking and biking trails to improve safety and usability
- **Action 8b:** Promote public transportation and commuter services
 - 1) Encourage the use of school buses and public transit
 - 2) Improve the bus riding experience and safety by investing in safe crossing, better signaling and shelters
 - 3) Invest in Bus Rapid Transit (BRT)
 - 4) Increase bus and shuttle options to connect with larger transit centers, close last mile gaps
 - 5) Optimize bus frequency and network coverage
- **Action 8c:** Implement [Smart-Growth](#), [placemaking](#), and transportation demand management (TDM) strategies
 - 1) Create more affordable housing near transportation hubs
 - 2) Create mixed-use neighborhoods and 'activity hubs' with amenities within walking distance (according to the '15-minutes neighborhood' concept)
 - 3) Increase housing density to facilitate public transportation efficiency
 - 4) Establish pedestrian only and/or car-free zones around commercial areas
 - 5) Commit to expanding walkable, transit-oriented, mixed-use developments with integrated green and open spaces to encourage 'local living'
 - 6) Incentivize private carpooling/vanpooling
 - 7) Increase telework options for public and private employees
- **Emerging Technologies:** Electric bikes, scooters, cargo-bikes
 - 1) Explore the integration of electric micromobility (e-scooters, e-bikes) in mobility plans
 - 2) Explore the integration of cargo bikes or e-bikes in delivery services

Implementation:

- **Category 1:**

- Continue implementation of smart-growth and transportation demand management strategies as outlined in the County's comprehensive plan
- Support focused zoning and land use planning (through parking minimums, zoning restrictions, etc.)
- County Programs
 - Continue implementation of Fairfax trail planning work as part of the County Comprehensive Plan, including the Capital Trails Network and the Bicycle Master Plan
 - Support the Safe Routes to Schools programs and encourage schools to add bike racks
 - Explore pricing schemes for parking at county-owned facilities
 - Implement policies to expand telework options for county employees
 - Implement county's anti-idling rule
- Education and Outreach
 - Produce best practices about the use and sharing of biking and walking trails
 - Create a system to publicly recognize car-free and single-car families
 - Leverage the existing community of car-free families, and local biking & walking advocates / ambassadors to create educational opportunities and peer-to-peer learning to promote walking/biking activities
 - Educate residents, especially young people, on the importance of riding transit
 - Educate residents about the footprint of private transport
- Development and Partnerships
 - Work with private companies to allow the creation of a robust network of rental bikes (e.g., BlueBikes share programs)
 - Create a program to recruit businesses to provide shopping discounts for people who bike or walk to those establishments
 - Streamline and expedite the permitting processes and funding allocation for the construction / repair of sidewalks and bike lanes
 - Work with Metro, Fairfax Connector and REX to improve coordination on service scheduling to close servicing gaps, while right-sizing serving capacity
 - Work with Metro, Fairfax Connector and private businesses to incentivize public transit options for their employees with monetary (discounts, 1 free ride every 10) or non-monetary incentives (e.g., perks at work)
 - Work with private businesses to expand options to carpooling, vanpooling while providing the adequate infrastructure and educational support (e.g., advertise Fairfax County park&ride existing infrastructure)
 - Work with businesses to seek funding and other incentives to provide last mile connections
 - Work with private businesses to incentivize telework options
- Financing and Funding
 - Seek funding opportunities to invest in bus shelters, safe crossings to bus stops, better signaling and lighting

- **Category 2:**

- Use zoning and land use codes as a planning tool to create higher density neighborhoods, mixed-use and transportation-oriented developments (TOD)
- Create and implement a Safe Routes for Seniors program
- Adopt the VisionZero2030 Goals to eliminate traffic deaths and reduce crashes
- Incorporate micromobility solutions in one fare system that works across metro, buses and rideshare/bikeshare
- Rulemaking
 - Support policies that allow for local congestion fees and zero/low emission zones
 - Evaluate the creation of pedestrian-only zones in densely populated areas
 - Explore policies to end parking minimum, and to repurpose underused parking lots to become electric vehicle charging hubs
- Partnerships
 - Work with Virginia DOT to implement and enforce 20 mph speed limit for vehicles in residential neighborhoods
 - Explore partnerships with delivery companies (large companies such as UPS, Fedex, DHL, as well as small local businesses) to create monetary and policy incentives for the use of cargo bikes
 - Work with private companies to evaluate the creation of an e-scooters rental program
 - Work on a Bus Network redesign to improve service coverage and efficiency of bus routes especially to grocery stores, shopping centers, medical centers, and other essential services
 - Work with Metro, Fairfax Connector and REX to explore the creation of free / reduced fare programs for disadvantaged categories (low-income, seniors, under 25 yrs old)
 - Work with Metro, Fairfax Connector and REX to offer 3, 6, or 12, months transit passes at discounted prices

- **Category 3:**

- Support state and federal funding efforts that prioritize non-motorized transportation rather than highway expansion
- Support state efforts to reduce vehicle miles traveled by implementing a Mileage-Based User Fee (MBUF) program
- Work with the state and federal government to evaluate expanding Metro / light rail services into Fairfax county
- Work with the state to secure funding to implement Complete Streets policies to increase safety of all transportation modes
- Work with the state / federal government to implement tax breaks for individuals using public transit
- Work with the state and Metro to procure clean renewable energy to power all existing and future electric vehicle assets

- Work with the state to increase access to broadband and 5G to expand telework options

Transportation Strategy #9: Increase fuel economy and use of low carbon fuels for transportation

Actions:

- **Action 9a:** Improve fuel economy by implementing a Low Carbon Fuels Program
- **Action 9b:** Support Corporate Average Fuel Economy (CAFE) or similar enhancement of fuel economy standards
- **Action 9c:** Support measures that improve efficiency and provide low carbon fuels to aviation
- **Emerging Technologies:** alternative low carbon fuels and zero emission (fuel cells)
 - Explore hydrogen fuel cells for heavy duty vehicles
 - Explore renewable fuels for heavy duty vehicles
 - Explore hybrid-electric retrofits

Implementation:

- **Category 1:**
 - Encourage hybrid-electric retrofits of county-owned diesel powered medium and heavy-duty vehicles that are not commercially available as fully electric.
 - Evaluate the deployment of renewable fuels (e.g., renewable diesel, renewable natural gas) in the County fleet and more broadly
 - Improve self-awareness about county fuel consumption by creating a carbon inventory
 - Explore local programs to collect and reuse waste oil for fuels (cooking, etc.)
 - Provide financing programs for low/no carbon fuel technologies
- **Category 2:**
 - Explore property tax credits for consumers purchasing higher fuel economy vehicles
- **Category 3:**
 - Support state and federal efforts to implement a Low Carbon Fuels Standard, and increase the fuel efficiency of on and off-road vehicles, and airplanes

Waste Strategy #10: Reduce the amount of waste generated and divert waste from landfills and waste-to-energy facilities.

Actions:

- **Action 10a:** Reduce overall waste generation
- **Action 10b:** Increase waste diverted from landfills and waste-to-energy by growing recycling and composting
 - 1) Recycling
 - 2) Composting
 - 3) Divert edible food to food banks, soup kitchens and other food related organizations.
 - 4) Divert re-usable clothes and home goods to secondhand store for reuse.
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- **Emerging Technologies:**

Implementation:

- **Category 1:**
 - Develop and implement a recycling program for construction/demolition debris (CDD), including public outreach and education to promote CDD source reduction and reuse
 - Expand county composting operations to address organic waste
 - Explore a [Zero Waste](#) plan, goals or framework for the County.
 - Business Growth
 - Incubation of startups, contractors and vendors to provide services to a circular economy
 - Education
 - Promote and expand “refuse, reduce, reuse, repurpose and recycle” initiatives that encourage source reduction of consumer waste and recycling
 - Clarity on recycling (what is included, do’s and don’ts, broader communication on benefits, etc.)
 - Clarity on reuse of material (where donations are accepted, etc.)
 - Expanded accessibility on waste management practices (more languages)
 - Enforcement of recycling through monetary penalties
 - Incentive programs
 - Rebates and incentives for individuals who compost certain waste types
 - Pay as you throw programs for either waste, recycling, yard waste or all.
 - Support for maker spaces and repair facilities
- **Category 2:**
 - Local regulation, fees and bans on items (plastic bags, straws, polystyrene, single use containers)
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- **Category 3:**
 - Support state and federal policies that reduce waste generation (single use plastics measures, chemical additive regulations, taxes on certain waste types, etc.)
 - Support state and federal policies to better manage construction demolition debris waste.

- Support statewide incentive programs for recycling (bottle return fees, etc.)
- State mandated recycling rates.
- Right to repair legislations

Waste Strategy #11: Responsibly manage all waste generated including collected residential and commercial waste, wastewater and other items.

Actions:

- **Action 11a:** Capture and use energy generated at all landfills and waste to energy facilities
- **Action 11b:** Explore alternative options for long term waste management (landfill, waste to energy, and other options)
- **Action 11c:** Explore improvements to wastewater treatment processes to capture energy.
- **Emerging Technologies:** Explore emerging technology options in waste to energy facilities internationally to improve air quality and reduce emissions.

Implementation:

- **Category 1:**
 - Explore ways to ensure county waste contracts align with best practices and best available technology for reducing GHGs.
 - Understand and clearly disclose impacts of existing waste to energy facilities (air quality analysis, other impacts)
 - Reduce emissions from wastewater treatment by reclaiming treated wastewater and sewage sludge
 - Use reclaimed wastewater for process cooling and irrigation.
 - Use sewage sludge for fertilizer application.
 - Align residential and commercial rules for waste disposal
 - Evaluate trash pickup frequency
- **Category 3:**
 - Support state and federal policies that reduce waste emissions from landfills by capturing landfilled gas and converting it to usable energy
 - Convert captured landfill gas into natural gas and electricity for county use or sale.
 - Capture gas generated by closed landfills.
 - Support state and federal policies that encourage energy generation from waste:
 - Support waste-to-energy initiatives.
 - Support energy production using bio-solids combustion.

Forestry and Other Land-Uses Strategy #12: Support preservation, restoration, and expansion of Fairfax County's natural systems and public spaces

Actions:

Action 12a: Conserve existing trees and green spaces to improve air and water quality.

Action 12b: Increase tree and green spaces throughout spaces with a focus on native and resilient species

- 1) Green Corridors and trail connections
- 2) Reforestations of spaces
- 3) Community Gardens & Local food forests

Emerging Technologies:

Implementation:

- **Category 1:**
 - In alignment with the Fairfax County Tree Action Plan, develop programs that conserve existing young and mature trees to help improve soils, filter groundwater, and remove air pollutants. Plant trees, when possible, in clusters with understory plant species and groundcover to encourage a healthy and complete ecosystem.
 - Use the [Tree Preservation and Planting Fund](#) to help cover costs of planting and preserving trees on public properties and common open spaces.
 - Conduct county-wide and site-specific inventories in advance of proposed development to minimizing impacts to and loss of high-quality trees and natural vegetative communities.
 - Development & Partnerships
 - Incentivize and/or encourage new development to protect existing trees (especially mature trees)
 - Allow more trees in development projects (setback adjustments)
 - Partner with HOAs to promote native vegetation and additional trees in existing spaces
 - Education
 - Broad education programs on importance and value of natural resources and trees
 - Institute measurement tool for tracking land's climate impact value
 - Regularly report on tree canopy data to public
 - Monitor tree cover changes using satellite imagery urban tree canopy analyses to assess current conditions and determine how forests and urban tree ecosystems are changing over time
 - Competitions
 - Financing Tools
 - Expansion of tree planting fund to private spaces
 - Land Use Review Processes
 - Reforms to better value and preserve natural areas.
 - Reforms on sale of land
 - Reforms that prioritize open space
 - Connection of land review to trails and green space connection work
- **Category 2:**
 - Regulations on removal of mature trees
 - Reform of eminent domain to allow for walking and biking paths.

- Broaden Fairfax County's ability to manage land with changes through Dillon Rule changes